DVR-3004HL/HD1 、 DVR-3008HL/HD1 、DVR-3016HL/HD1

DVR User’s Manual

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Welcome

Thank you for purchasing our DVR!

This operating manual is designed to be a reference tool for the installation and operation of your system.

Here you can find information about this series DVR features and functions, as well as a detailed menu tree.

Before installation and operation please read the following safeguards and warnings carefully!

Important safeguard and warnings

1．Electrical safety

All installation and operation here should conform to local electrical safety codes.
We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

2．Transportation security

No heavy stress, violent vibration or water splash are allowed during transportation, storage and installation.

3．Installation

Keep upwards. Handle with care.
Do not apply power to the DVR before completing installation.
Do not drop objects on the DVR

4．Qualified engineers needed

All the examination and repair work should be done by the qualified service engineers.
We are nor liable for any problems caused by unauthorized modifications or attempted repair.

5．Environment

The DVR should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.

6. Accessories

Be sure to use all the accessories recommended by manufacturer.
Before installation, please open the package and check all the components listed below are included:

- One power cable
- One Ethernet cable
- A package of installation fittings
- DVR user’s manual

- One CD
- Product warranty card
- 25-pin alarm switch
- DB 25-pin audio cable (For CIF 8/12/16 channel series only)

Contact your local retailer ASAP if something is missing in your package.

1 Specification and features:

1.1 Features:

This series DVR has the following features:

- Real-time Monitor
  - Analog output port and VGA port. Support monitor or display.
  - 1/4/9/16 window monitor
  - Real-time and historic data stream statistics
  - System log review
- Compression format: MPEG4/H.264
  - 4/8//16CH video compression and real-time hardware compression for each channel.
  - Audio and video synchronization
- Storage
  - Build-in IDE ports. No limit on hard disk capacity
  - Hard disk sleep technology
  - Cover circle and non-circling record
  - Unique data storage technology to guarantee high data security
- Video backup
  - Backup via USB port
  - Download to local PC via internet
- Video playback
  - Each channel record independently
  - Support single channel playback and search, network surveillance, video search and download
  - Multiple video types: ordinary video, dynamic detection, external alarm. Pre-record function for dynamic detection and external alarm
  - Visit video file via internet
  - Quick search and video type list
  - Various playback modes: X1/2, X1/4 slow play, 2 x and 4x fast play, backwards play and frame by frame playback.

- Support time display during playback

- Web client operation
  - Real-time network surveillance
  - Video search and playback(depend on you network)
  - System setup modification and system upgrade
  - Remote alarm management and system log review
  - Embedded TCP/IP protocol operation system. Access via IE
  - Two level management, password authentication
- Activation on alarm
  - Four external power input, video loss alarm, dynamic surveillance alarm, equipment alarm (smoke sensor, temperature sensor and IR sensor)
  - Relay alarm output. Support activation on alarm and lamp control
  - Cable protection for Alarm input and alarm output port
- Communication port:
  - 25-pin port : support alarm input and PTZ control
  - RS232 port : support system maintenance and upgrade
  - Standard Ethernet port : support visit via internet
  - Two USB 2.0 ports

1.2 Specification

Please refer to the following sheet for this series DVR specification.

Items	**4-channel**	**8-channel**	**16-channel**
Model	DVR-3004HL/HD1	DVR-3008HL/HD1	DVR-3016HL/HD1
Processor	Industrial embedded micro processor		
Operating system	Embedded LINUX operating system		
Video input	4 /8/16Channel (NTSC/PAL) BNC (1.0VP- P ， 75Ω)		
Video output	1 channel PAL/NTSC,BNC(1.0Vp-p,75 Ω)	2 channel PAL/NTSC, BNC (1.0Vp-p,75 Ω) or VGA.	

Audio input	4/8/16 channel audio input 200-2500mv,30k Ω	1 channel audio talk input 200-2500mv,30k Ω
Audio output	1 Channel output 200-3000mv 5KΩ(BNC)	1 channel output 200-3000mv 5 KΩ (RCA)
Video display	1/4 /9/16 window display	
Video format	NTSC（525 line, 60f/s），PAL（625 line, 50f/s）	
System resource	Real-time recording, support two channel playback and network real-time monitor simultaneously.	
Image resolution	PAL: Real-time surveillance D1:704×576 Playback D1 704×576 NTSC: Real-time surveillance D1:704*480 Playback D1 704×480 VGA 1024*768	
Motion detection	Area setting: 192 (16*12) detection areas on the screen; Various detection sensibilities for each area.	
Video compression	MPEG-4/H.264	
Audio compression	ADPCM	
Video recording speed	MPEG4:real-time:Half D1 CIF1-25f/s(PAL):1-30f/s(NTSC) D1 50 frames/s for every 4 channels	
Image quality	Six levels (optional)	
Hard disk	Build-in 4 IDE ports. Support 8 HDD. No limit to the hard disk capacity	
HDD space occupation	Audio：28.8M bytes/hour Video：56-900M byte/hour	
Alarm input	16 channel voltage alarm output	
Alarm output	6 channel relay output	
Alarm relay	30VDC 2A, 125VAC 1A（relay output）	
Network connection	RJ45 10M/100M self-adaptability Ethernet connection	

Pan-tilt control	RS485,RS232		
Power	220VAC 50Hz/110VAC 60Hz		
Power consumption	25W	30W	40W
Working temperature	-10℃ - +55℃		
Working humidity	-10% - 90%		
Barometric pressure	86kpa - 106kpa		
Size	2U standard industrial case 441 x430 x89 (W*D*H unit: mm)		
Weight	7KG		

2 Installation and operation

2.1 Hard disk installation

Please follow the instructions below to install hard disk first.

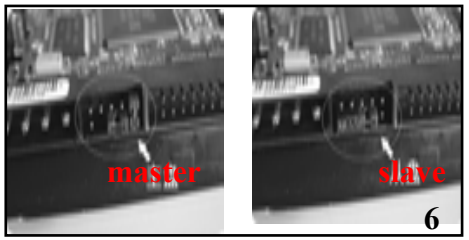
1. Remove the upper cover of the DVR

2. Remove the HDD bracket from internal unit

3. Dismantle the upper HDD bracket

4. Install the HDD. Note the HDD is placed upside down. Please make sure bracket is in correct position

5. Screw the two bracket parts together

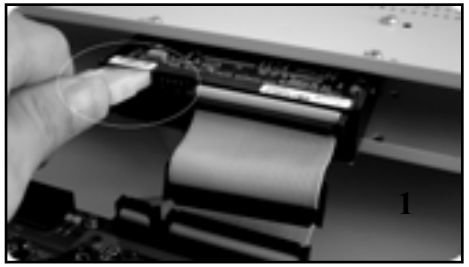


6. Set master/slave on the HDD

7. Fix the HDD bracket into the internal unit

8. Find the power cords for the HDD

9. Connect the HDD with IDE port through data communication cable



10. Connect power cord to the HDD

11. Place the upper cover back and screw firmly

12. Connect USB devices (USB mouse, USB removable HDD, USB CD-RW) to the USB port directly

2.2 Front panel

The front panel is shown as in Figure 1.

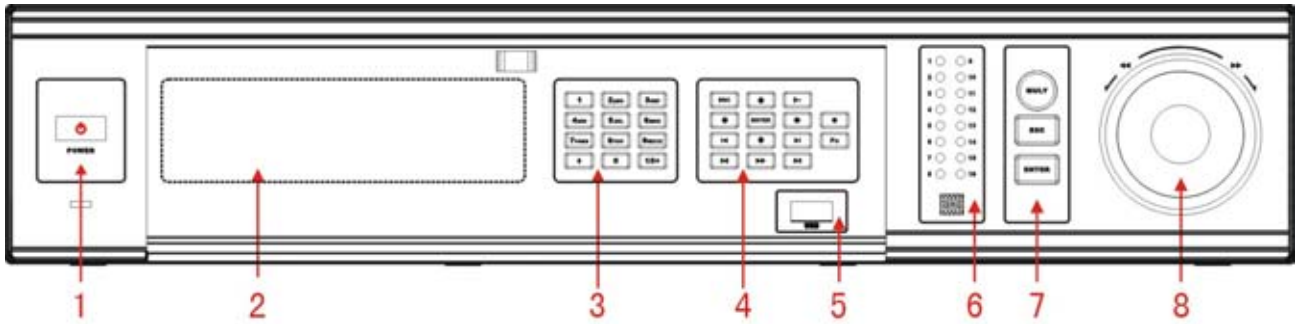


Figure 1 Front panel

1. Power key
2. CD-RW Bay
3. Numeric key
4. Record and playback key
5. USB port
6. Indicator and remote control
7. Enter/ESC/Mult
8. Jog shuttle

2.3 Key function

No.	Key	Sign	Function
1	Power	POWER	Power on/off (press the key for ad least 3 seconds to turn off the DVR.)
2	Power Indicator		Power indicator
3	Shift	↑	TV/VGA switch by pressing the key for 3 seconds under display screen. (3 mode

			Shift between number/English small letter/English capital letter/ Chinese (optional)
4	Number	0-9	Password input, screen switch and number input
5	10+	10+	Input numbers larger than 10 using 10+ key
6, 7	Up/Down	▲ ▼	Lengthways moving: change set-up, change number, pan-tilt control
8, 9	Left/Right	◀ ▶	Transverse Moving: playback control, pan-tilt control
10	ESC	ESC	Cancel menu and control
11	ENTER	ENTER	Operation confirmation
			Shift to default key
			Enter main menu
12	Record	●	Start/stop manual record
13	Slow-forward	▶	Multi-level slow-forward
14	Function Assistant	Fn	Press Fn under single screen monitoring: Pan-tilt Control and Image Color pop up Switch to pan-tilt and zoom control under Pan-tilt Control menu
			Use Fn and direction key to finish motion detection area configuration
			Backspace function
			Shift between recording time and other information under HDD information menu
			Other secondary functions
15	Fast-forward	▶▶	Multi-level fast-forward
16	USB Port		Connect to USB storage devices, USB mouse and USB CD-RW
17	Play Last Record	⏮	Play last record; shift to upper level menu
18	Backward/Pause	⏸◀	Backward/pause
19	Play Next Record	▶⏭	Play next record; shift to lower level menu

20	Play/Pause	▶/ II	Play/pause record
			Enter record search menu under real-time monitoring
21	Channel Indicator		Indicator on when the relevant channel is recording
22	Standby Indicator		Indicator on when system standby
23	Remote Control Receiver		Receive wireless signal from remote control
24	Function Indicator		
25	Mult	Multiple	Multi-screen/single screen switch
26	Outer Jog Shuttle		Left/right function under real-time monitoring; fast-forward/fast-backward under playback mode
27	Inner Jog Shuttle		Up/down function; single frame playback control

2.4 Rear panel

The rear panel looks like below. See Figure 2.

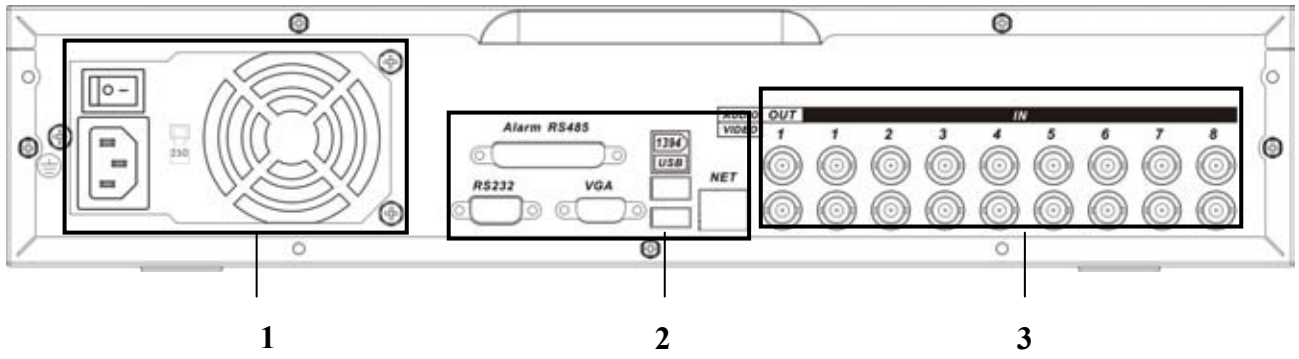


Figure 2 Rear panel

Serial number	
1	Power button Power outlet Fan
2	RS485 port 、RS232 port 、VGAport , USB, 1394 port, RJ-45
3	Audio input and output port Video input and output port

2.5 Remote control

The remote control is shown as in Figure 3.

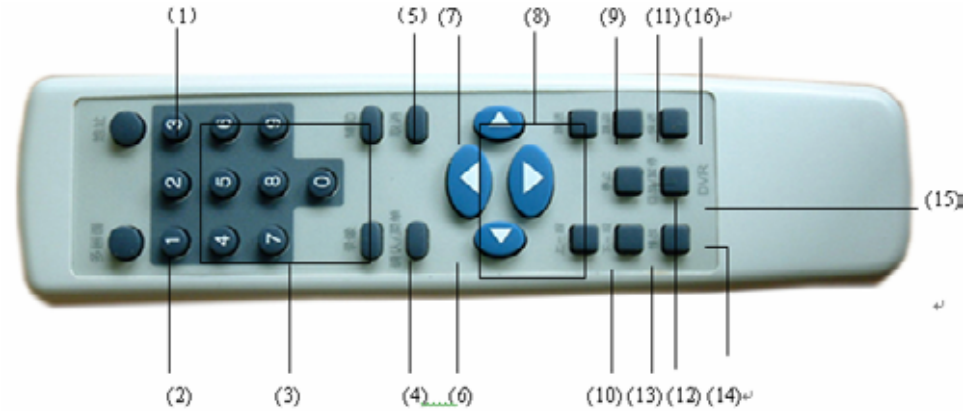


Figure 3 Remote control

Serial number	Function
1	remote switch
2	Multiple-window switch
3	0-9 number key
4	Record

5	Auxiliary key
6	Confirm /menu key
7	Cancel
8	Direction key
9	forward
10	Previous
11	Back
12	Stop
13	Next
14	Slow play
15	Play/Pause
16	Fast play

2.6 Mouse operation

Left click mouse	Have not login	Pop up password input screen
	Real-time surveillance mode	Enter the main menu
	In menu selection mode	Enter the select item
	In combo box	Pop up pull down list
	Click number box or pass word box	Select number keyboard or character keyboard

>: from small character to capitalized character
<: from capitalized character to small character
X: delete all
√:confirm the current value and close current panel

Double left click mouse	Implement current selection	such as double click one file name to playback the video
	Surveillance mode:	In single mode: change to multiple-window surveillance mode In multiple window mode: double click one video to change to full-screen display mode
Right click mouse	Surveillance mode	Pop up short cut menu
	In menu setting	Exit current menu without saving the settings
Press middle button	In number box	Increase or decrease number
	In combo box	Change selection
	In menu screen	Move cursor
	In list box	Move up and down
Move mouse	Select current controls	
Drag mouse	Select dynamic area	
	In PTZ menu	Click one item to move menu

2.7 Alarm input and output connection

2.7.1 Peripheral connection

Here is an alarm peripheral connection for you reference. See Figure 4.

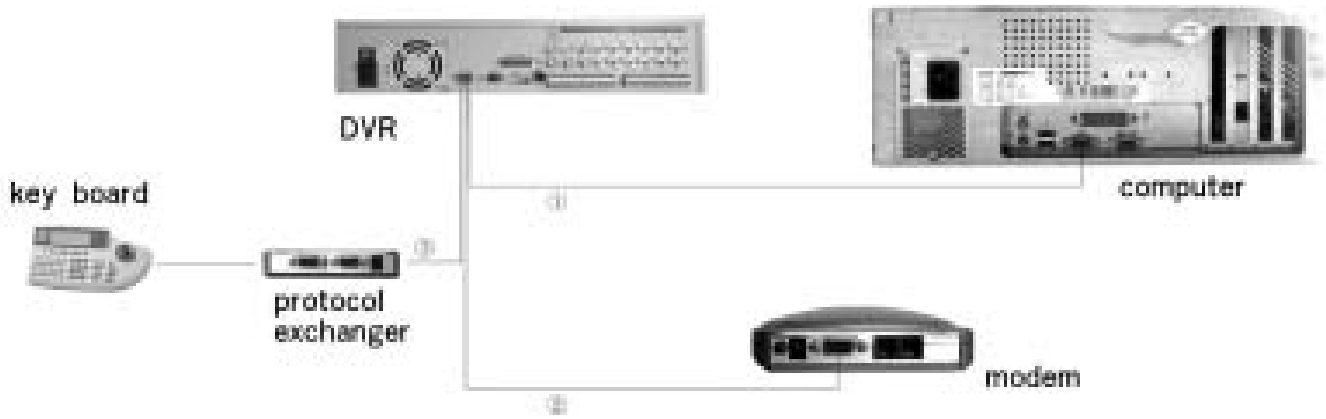


Figure 4 peripheral connection

Note:

- The connection for program upgrading or debugging through serial port
- The connection for dial-up login through MODEM
- The connection for DVR control through keyboard

If you want to control pan-tilt, lens and process the relay of the alarming signals by the DVR, it can be realized through the alarm relay connection on the 15-pin plug at the rear panel. This connection can control various pan-tilt decoders, and the specific type of the decoder can be selected from the Control of the System setting in the menu. The foot's serial number is marked on DB15 plug. The definition of the foot is as below. See Figure 5.

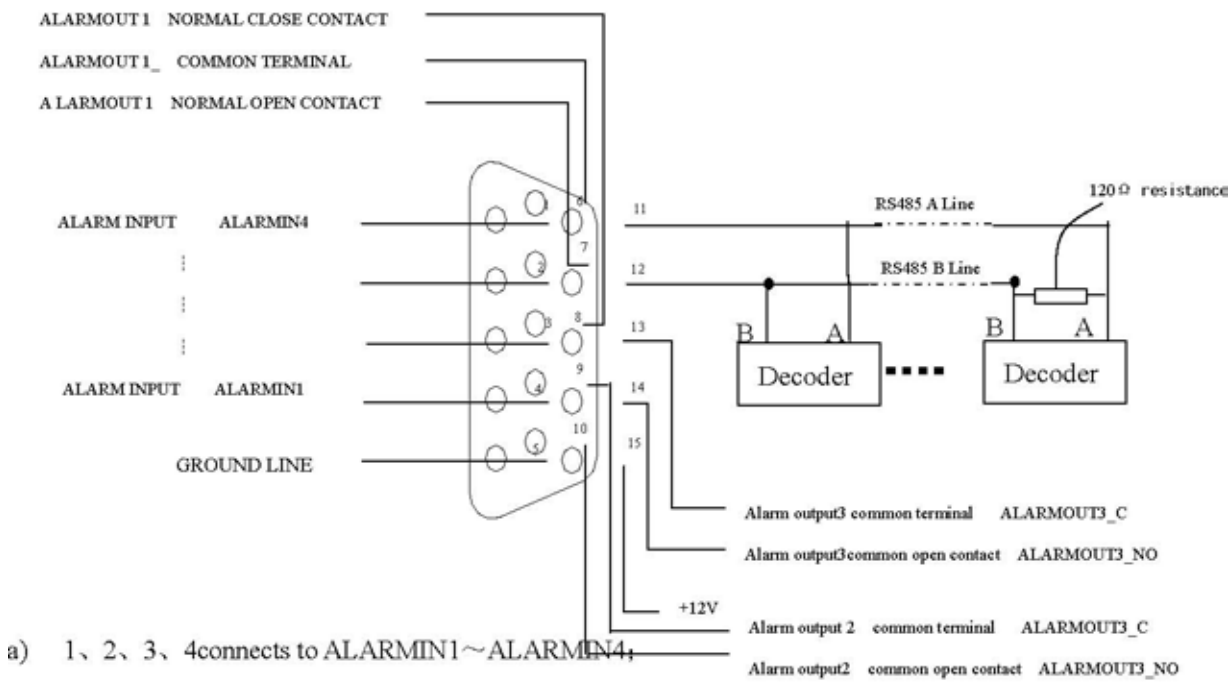


Figure 5

b) 6、7、8-ALARMOUT1，9、10-ALARMOUT2 two group relay output（digital）；

c) 15 +12V power output, used as the power supply for alarm sensor；

d) 11 A line of RS485 ，12 B line of RS485；

e) 5 Ground line

f) 13\14-ALARMOUT3 normal open contact

2.7.2 Alarm input and output device connection

Before connection, please pay attention to the following points:

2.7.2.1 Alarm input

- Confirm whether the alarm input is grounding alarm input or voltage alarm input.
- Alarm input: for D1/HD1series, 5~15v is needed for voltage alarm input..

2.7.2.2 Alarm output

Do not connect alarm output port directly with high power load in case of heavy current which will destroy the relay. You can use the co-contactor to realize the connection between the alarm output port and the load.

2.7.2.3 How to connect PTZ decoder

- Ensure the decoder has the same grounding with DVR, otherwise possible common mode voltage may fail to control the PTZ. Shielded twisted wire is recommended and the shielded layer is used to connect to the grounding.
- Avoid the entry of high voltage. Ensure proper wiring and some thunder protection measures
- For long signal wires, 120Ω should be parallel connected between A, B lines on the far end to reduce reflection and guarantee the signal quality.
- “485 A, B” of DVR cannot parallel connect with “485 port” of other device.
- The voltage between A,B lines of the decoder should be less than 5v.

2.7.2.4 12V output

Provide the power to alarm device with current less than 1A.

2.7.2.5 Pay attention to the grounding

Poor grounding of the front-end devices may cause damage to chips.

The alarm input type can be Normal Open or Normal Close.

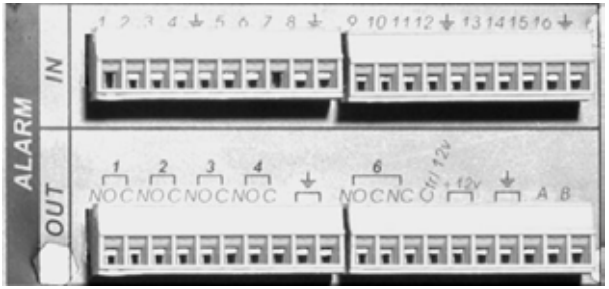


Figure 6

Parameter	**Grounding alarm**
ALARM (1…16)	16 channels grounding alarm input
OUT	In **OUT** row,1-NO C, 2-NO C, 3-NO C and 4-NO C are 4 normal open relay outputs. 6-NO C NC is a NO/NC relay output.
“＋12V”:	Peripheral equipment provide +12 power with 1 A current
A、B	Connect some control devices such as pan/tilt decoder. If you connect many pan-tilt decoders, you should parallel connect 120Ω between A, B lines.
⏚	Ground.

2.7.3 Alarm input connection

Please refer to Figure 7.

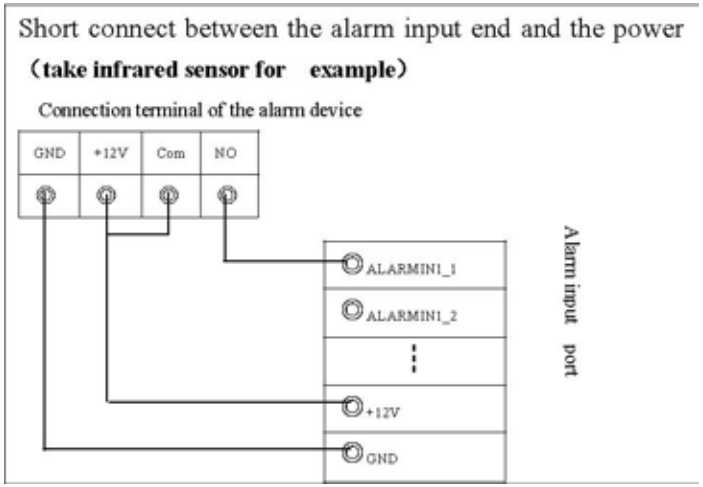


Figure 7 alarm input

2.7.3.1 ·Instruction of the alarm input end:

Four channel alarm inputs: there are two input type: normally open or normally close. The power of the alarm sensor can be provided by the DVR. But sometimes too many alarm sensors may affect DVR performance.

Note:

When the alarm sensor is powered by external supply, the ground line must be connected with that of DVR alarm output port.

2.7.3.2 Instruction of the alarm output end

Three channel alarm outputs（normally open contact）.To avoid DVR overload, please refer to the related parameter of the relay, and check the attached form for the related relays' parameter.

2.7.3.3 Instruction of RS485 A、B line

It is Used to connect the A and B line of the pan-tilt decoder

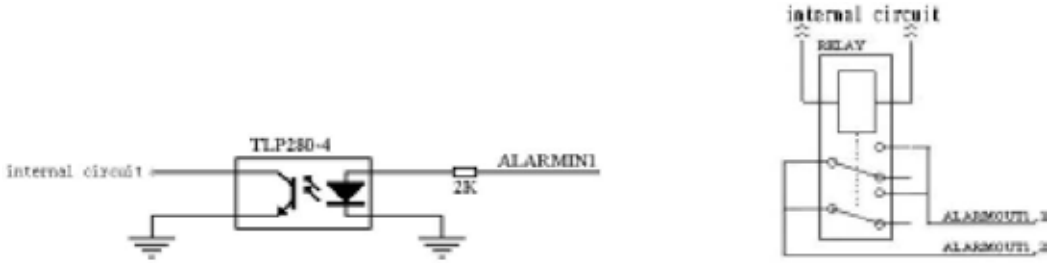


Figure 8 module sketch of the alarm input and output end

2.7.4 Alarm output relay specification

Model:	JRC-27F	
Material of the touch	Sliver	
Rating （resistance load）	Rated switch capacity	30VDC 2A, 125VAC 1A
	Maximum switch power	125VA 160W
	Maximum switch voltage	250VAC, 220VDC
	Maximum switch currency	1A
Insulation	between touches with same polarity	1000VAC 1minute 50/60Hz
	between touches with different polarity	1000VAC 1minute 50/60Hz
	between touch and winding	1000VAC 1minute 50/60Hz
Surge voltage	between touches with same polarity	1500V (10×160us)
Length of open time	3ms max	

Length of close time	3ms max	
Longevity	Mechanical	50×106 times (3Hz)
	Electrical	200×103 times (0.5Hz)
Temperature	-40~+70℃	

2.8 Input methods

2.8.1 Keyboard

The system supports two input methods: numeral input and English character (small and capitalized) input.

Move the cursor to the text column, the text shows as blue, input button pops up on the right. Click that button to switch between numeral input and English input (capitalized and small)

Use > or < to shift between small character and capitalized character.

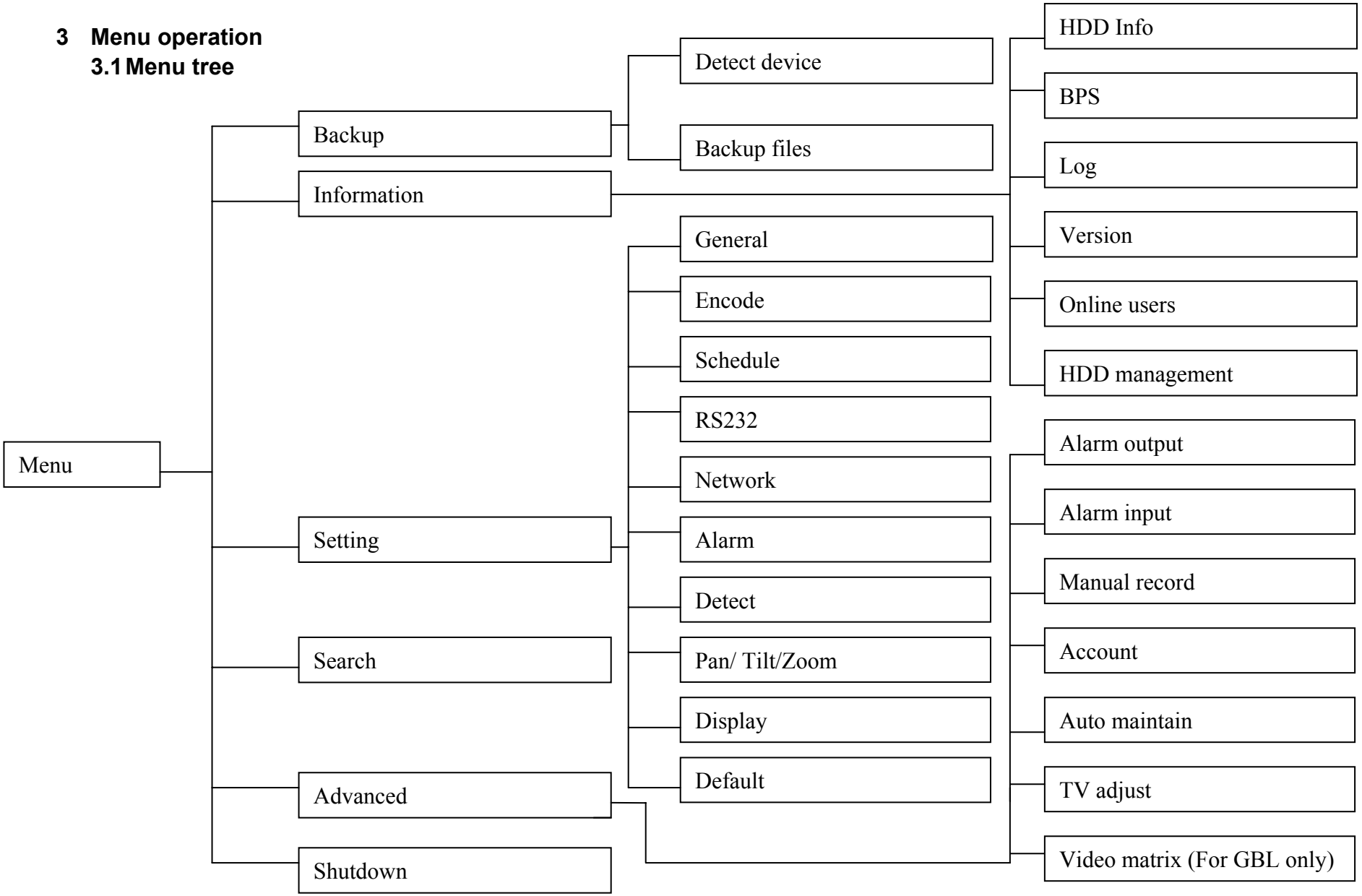
2.8.2 Front panel

Front panel only support numeral input.

Move the cursor to the text column. Click Fn key and use direction keys to select number you wanted. Please click enter button to input.

3 Menu operation

3.1 Menu tree



3.2 Main menu

When you login, the system main menu shows as below. See Figure 9 . There are totally six icons: search, Information, setting, backup, advanced and shutdown. Move the cursor to highlight the icon, then double click mouse to enter the next menu.

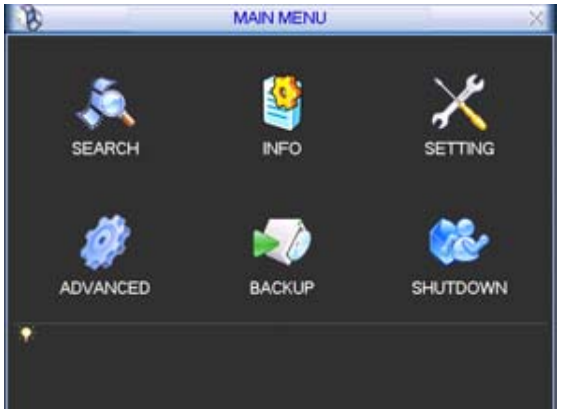


Figure 9 main menu

3.3 System setting

In main menu, highlight setting icon and double click mouse. System setting window is shown as below. See Figure 10.

Figure 10 system setting

3.3.1 General

General setting includes the following items. See Figure 11.

- System time: here is for you to set system time
- Date format: there are three types: Y-M-D: M-D-Y or D-M-Y.
- Date separator: there are three denotations to separate date: dot, beeline and solidus.
- Time format: there are two types: 24-hour mode or 12-hour mode.
- Language: system supports various languages: Chinese (simplified), Chinese (Traditional), English, Italian, Japanese, French, Spanish (All languages listed here are optional. Slight difference maybe found in various DVRs.)
- HDD full: Here is for you to select working mode when hard disk is full. There are two working modes: stop recording or rewrite.
- Pack duration: Here is for you to specify record duration. Default value is 60 minutes.
- DVR No: when you are using one remote controller to control several DVRs, you can give a name to each DVR for your management.
- Video standard: There are two formats: NTSC and PAL.
- Auto logout: Here is for you to set auto logout interval once login user remains inactive for a specified time. Value ranges from 0 to 60 minutes.

Note: since system time is very important, do not modify time casually unless there is a must.
After all the setups please click save button, system goes back to the previous menu.

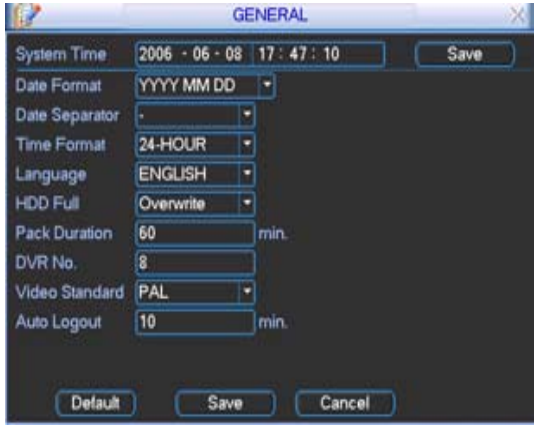


Figure 11 General

3.3.2 Encode

Encode setting includes the following items. See Figure 12.

- Channel: Select the channel you want.
- Compression: system supports two formats: MPEG4/H.264
- Resolution: System supports various resolutions such as D1、HD1、DCIF、CIF.
- Bit rate: system supports two types: CBR and VBR.
- Quality: There are six levels ranging from 1 to 6. Level six is the highest image quality.
- Frame rate: there are six levels: 1 f/s,2f/s,3f/s, 6f/s,12f/s,25f/s. Totally amount should less than 36 f/s(PAL) or 44f/s(NTSC)
- Enable audio: you can turn on or off the audio.
- Cover area: Here is for you to set window blanking section. You can drag you mouse to set proper section size.
- Time display: You can select system display time or not.
- Channel display: You can select system display channel number or not.

Please highlight icon to select the corresponding function.

Please highlight icon to select the corresponding function.

For enhanced DVR (GBE series), it supports various setups for channel, resolution and frame:

Resolution：pixel

PAL：CIF＝352×288pixel； HD1＝352×576 pixel；D1＝704×576pixel；2CIF=704×288pixel.

NTSC：CIF＝352×240pixel；HD1＝352×480pixel；D1＝704×480pixel；2CIF=704×288pixel.

We take 16-channel DVR as an example. There are four groups：1~4，5~8，9~12，13~16。

Please refer to the formula：pixel× frame rate× channel

The resources for one group are: PAL: 704×576×25×2 or NTSC: 704×480×30×2

D1×25（30）frame×2-channel＝ HD1×25（30）frame×4-channel ＝ CIF×50（60）frame×4-channel

You can arrange channel parameter within the specified limit.

Please refer to the following list：

Channel resources				**Maximum frame PAL（NTSC）**	**Note**
A	B	C	D		
D1	D1	×	×	25(30)f/s	2 D1 real-time
D1	D1	D1	D1	12(15)f/s	4 D1non-real time
D1	HD1	HD1	×	25(30)f/s	1 D1,2 HD1real-time
D1	HD1	CIF	CIF	25(30)f/s	1 D1,1 HD1,2 CIF real-time
HD1	HD1	HD1	HD1	25(30)f/s	4 HD1 real-time
2CIF	2CIF	2CIF	2CIF	25(30)f/s	4 2CIF real-time
CIF	CIF	CIF	CIF	25(30)f/s	4 CIF real-time
…	…	…	…	…	Other setup

Note：

- A、B、C、D is the four channels in one group.
- The totally whole resources are limited. When you wan to enhance resource in one channel you need to reduce resource for other channel.
- The system will pop up setup failure interface if the resource setup is beyond the limit.
- In the above list, × means there is no video in current channel. You can highlight “video” button to activate video function.

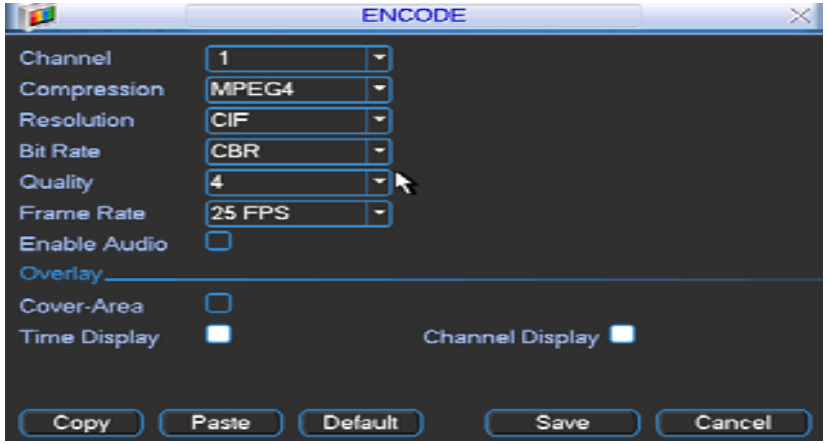


Figure 12 Encode(This figure is for GB series only)

3.3.3 Schedule

When system boots up, default mode is 24-hour record. There are totally six periods. See Figure 13.

- Channel: Please select the channel number first.
- Week day: There are eight options: ranges from Saturday to Sunday and all.
- Redundancy: System supports dual backup function. You can highlight Redundancy button to activate this function.
- Prerecord: System support prerecord function. The previous one to three seconds video before alarm occurs can be included in recorded video.

- Record types: There are three types: regular, motion detection (MD) and Alarm.

Please highlight icon to select the corresponding function.

Note:

About redundancy setup please note:

- If current channel is not recording, current setup gets activated when channel begin recording the next time.
- If current channel is recording now, current setup will get activated right away, the current file will be packed and recorded as you have just set.

After all the setups please click save button, system goes back to the previous menu.

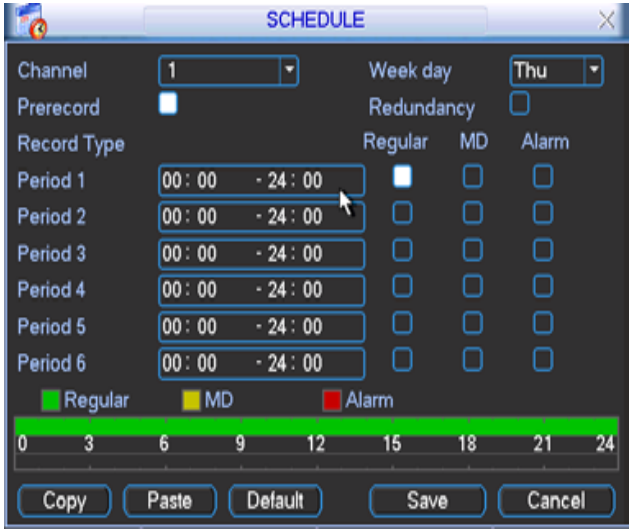


Figure 13 Schedule

3.3.4 RS232

RS232 window is shown as below. Here are five items. See Figure 14.

- Function: There are various devices for you to select.
- Baud rate: You can select proper baud rate.
- Data bit: You can select proper data bit.
- Stop bit: There are three values: 1/1.5/2.
- Parity: there are three choices: none/odd/even.

After all the setups please click save button, system goes back to the previous menu

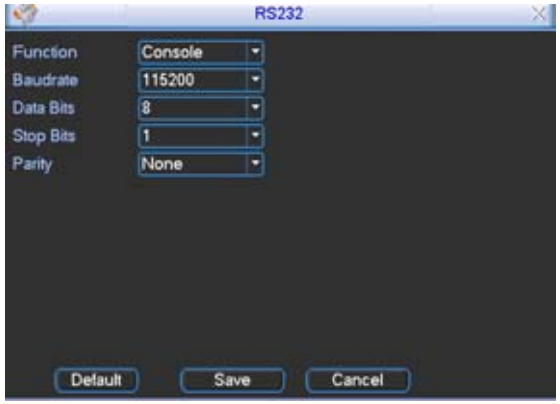


Figure 14 RS232

3.3.5 Network

Here is for you to input network information.

- IP address
- Subnet mask
- Gateway
- Service port: Default value is 37777.
- HTTP port: Default value is 80

- Protocol: Select proper protocol.
- Mas connection: support maximal 10 users.

After all the setups please click save button, system goes back to the previous menu

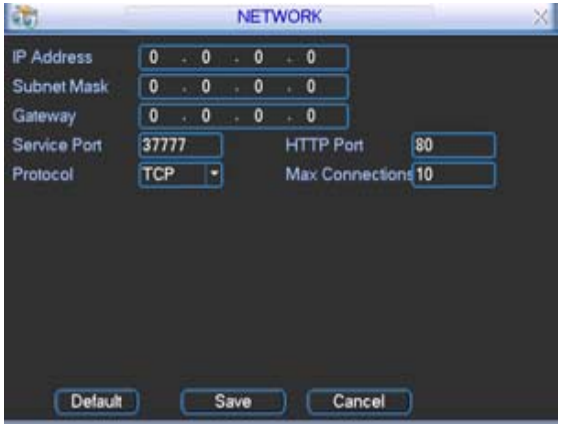


Figure 15 Network

3.3.6 Alarm

Alarm interface is shown as below. See Figure 16.

- Alarm in: You can proper alarm in when alarm occurs.
- Source of alarm: local input or net input.
- Type: there are two types: normal open and normal close.
- Record channel: you can select proper channel to record alarm video.
- Delay: Here is for you to set proper delay duration. Value ranges from 10 to 300 seconds. System automatically delays specified seconds in turning off alarm and activated output after outside alarm cancelled.
- PTZ preset: Here is for you to activate PTZ control.

- Alarm out: select proper alarm output.
- Show message: System pops up message to alert you once alarm occurs.
- Period 1 and period 2: set proper time and alarm types.

Please highlight icon to select the corresponding function.
After all the setups please click save button, system goes back to the previous menu.

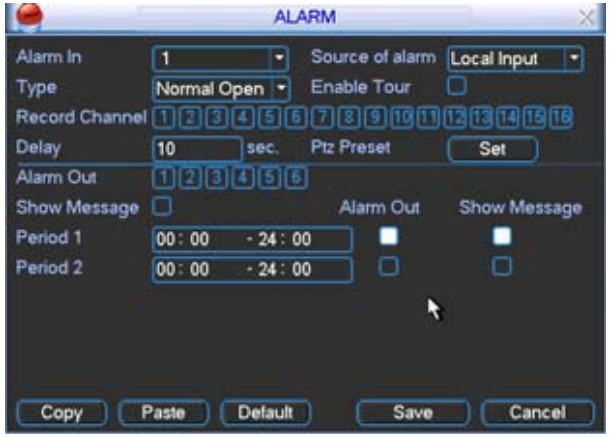


Figure 16 Alarm

3.3.7 Detect

Detection window is shown as below. See Figure 17.

- Channel
- Record channel
- Alarm output
- Enable tour: Here is for you to activate tour.
- Delay:

- PTZ preset: Click set button, the image is shown as in
- Region:
- Sensitivity:
- Alarm output
- Show message: System pops up message alert you once alarm occurs.

Please highlight icon to select the corresponding function.
After all the setups please click save button, system goes back to the previous menu.

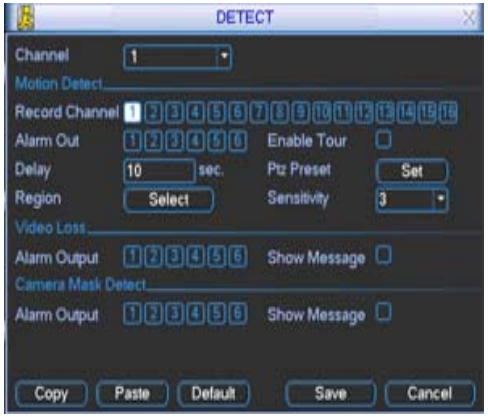


Figure 17 Detect

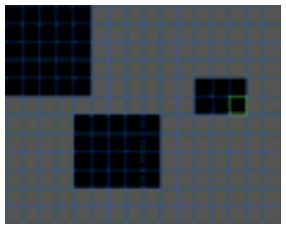


Figure 18 PTZ preset

3.3.8 Pan/Tilt/Zoom

The pan/tilt/zoom setup includes the following items. Please select channel first. See Figure 19.

- Protocol: select corresponding PTZ protocol such as DH-SD1.
- Address: input corresponding PTZ address.
- Baud rate: select baud rate.
- Data bit: select data bit.
- Stop bit: select stop bit.
- Parity: there are three choices: none/odd/even.

After all the setups please click save button, system goes back to the previous menu.

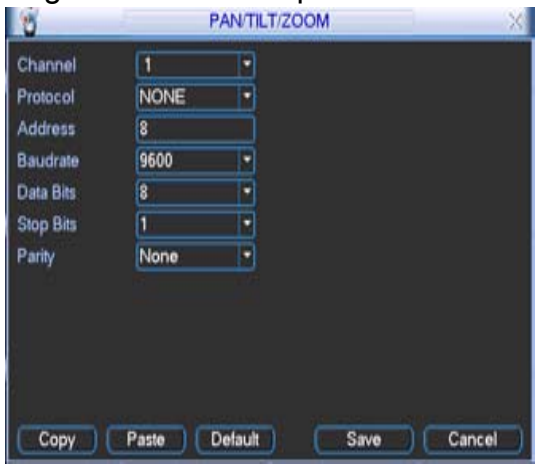


Figure 19 Pan/Tilt/Zoom

3.3.9 Display

Display setup window is shown as below. See Figure 20.

- Transparency: Here is for you to adjust transparency.
- Channel name: Here is for you to modify channel name.
- Time display: You can select display time or not.
- Channel display: You can select channel name or not.
- Enable tour: activate tour function.

- Interval: Input proper interval value here.
- View1/4/9/16: System support 1/4/9/16 window tour.

Please highlight icon to select the corresponding function.
After all the setups please click save button, system goes back to the previous menu.

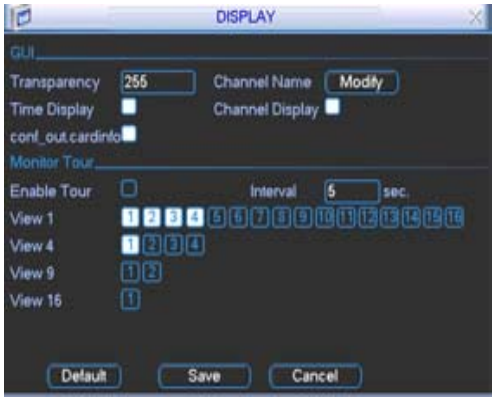


Figure 20 Display

3.3.10 Default

Click default icon, system pops up a dialogue box. You can draw a before check box to restore default factory setup. See Figure 21.

- Select all
- General
- Encode
- Schedule
- RS232
- Network

- Alarm
- Detect
- Pan/tilt/zoom
- Display
- Channel name

Please highlight icon to select the corresponding function.
After all the setups please click save button, system goes back to the previous menu.

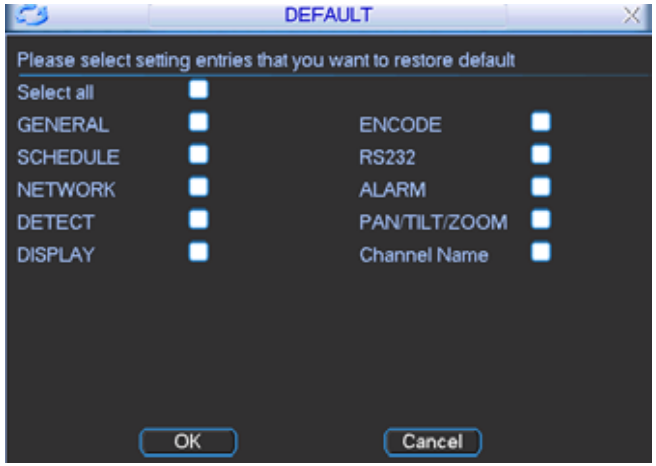


Figure 21 Default

3.4 Search

Click search icon in the main menu, the image is shown like below. See Figure 22.

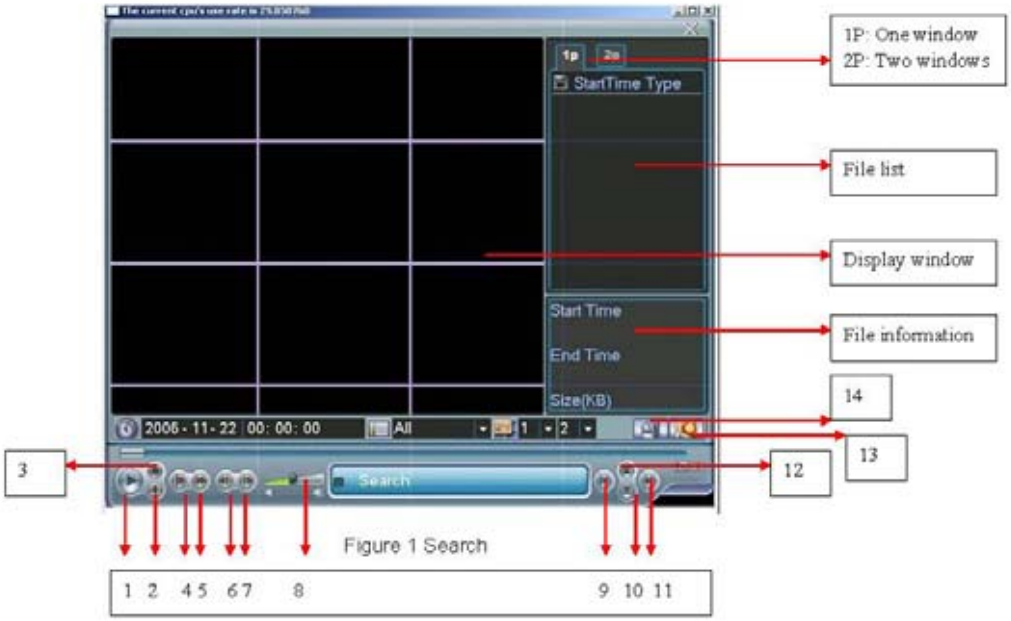


Figure 22 Search

Please refer to the next sheet for more information.

Serial number	Function
1	Play
2	Backward
3	Stop
4	Slow play
5	Fast play
6	Previous frame
7	Next frame
8	Volume

9	Previous file
10	Next channel
11	Next file
12	Previous channel
13	Search
14	Backup

3.5 Backup

Click backup icon, there are two function items: detect device and backup files.

3.5.1 Detect device

Here is for you to view devices information. See Figure 23.

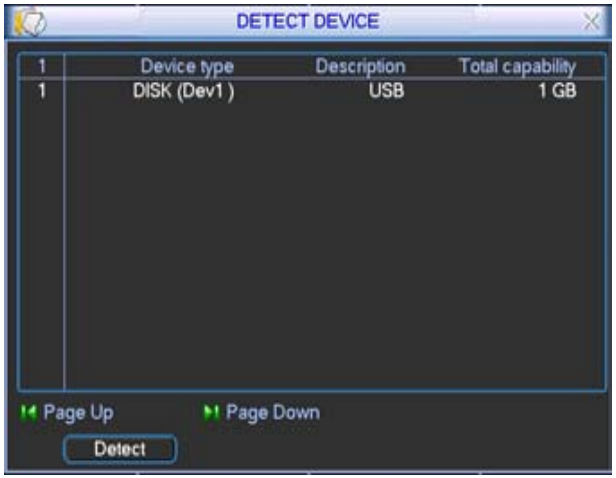


Figure 23 Detect device

3.5.2 Backup files

Here is for you to backup files you need. See Figure 24.

You need to select device first, then select the following items to search the files you need.

- Channel
- Type
- Start time
- End time

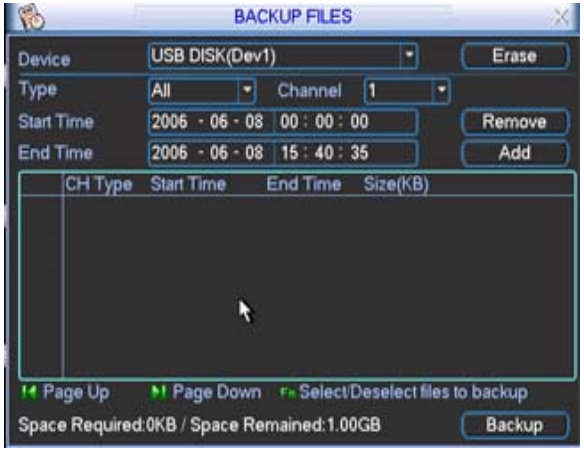


Figure 24 Backup files

3.6 Advanced

Double click advanced icon in the main window, the image shows as below. See Figure 25. There are totally seven function keys: hard disk management, alarm output, alarm input, manual record, account, auto maintain, TV adjust.

Figure 25 Advanced

3.6.1 Hard disk management

Here is for you to view and implement hard disk management. You can set proper mode for each hard disk. After all the setups please click save button, system goes back to the previous menu.

Figure 26 HDD management

Click alarm set button, the image is shown as below. See Figure 27.

Please highlight icon to select the corresponding function.
After all the setups please click OK button, system goes back to the previous menu

Figure 27 Alarm set

3.6.2 Alarm output

Here is for you to set proper alarm output.

Please highlight icon to select the corresponding alarm output.
After all the setups please click OK button, system goes back to the previous menu. See Figure 28.

Figure 28 Alarm output

3.6.3 Alarm input

Here is for you to set alarm input.

Please highlight icon to select the corresponding input channel.
After all the setups please click save button, system goes back to the previous menu. See Figure 29.

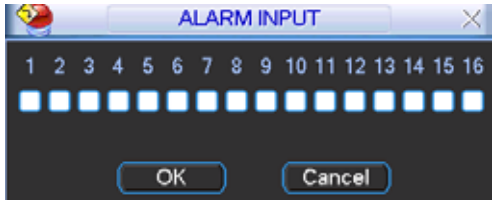


Figure 29 Alarm input

3.6.4 Manual record

Here is for you to set manual record setup.

Please highlight icon to select the corresponding function.
After all the setups please click OK button, system goes back to the previous menu. See Figure 30.

Figure 30 Manual record

3.6.5 Account

Here is for you to implement account management. See Figure 31. Here you can:

- Add new user
- Modify user
- Add group
- Modify group
- Modify password.

After all the setups please click save button, system goes back to the previous menu.

Figure 31 account

3.6.6 Auto maintain

Here you can set auto-reboot time and auto-delete old files setup. See Figure 32.
You can select proper setup from drawdown list.
After all the setups please click save button, system goes back to the previous menu.

Figure 32 Auto maintain

3.6.7 TV adjust

Here is for you to adjust TV output setup. See Figure 33.

Please drag slide bar to adjust.

After all the setups please click OK button, system goes back to the previous menu.

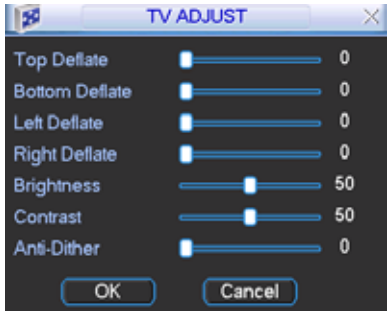


Figure 33 TV adjust

3.6.8 Video Matrix (For GBL series only)

1604LBL Series have the matrix and loop outputs.

3.6.8.1 Loop outputs

They are just the same with video distributors. There are 16-ch video loop outputs from our DVR. The DVR video output can connect with other devices such as TV walls, analog matrix and so on.

3.6.8.2 Matrix outputs

They are like the small-scale matrix. You can select any camera from our DVR to switch. And the output can also tour between the cameras. So the matrix outputs can be used to build TV walls and tour and display the cameras one by one.

3.6.8.3 Rear Panel Connection

1601LBL rear panel is shown as below. See Figure 34.

Figure 34 1601LBL rear panel

3.6.8.4 37-pin cable introduction

There are three colors cable. See Figure 35.

- Black: for loop outputs, there are 16-ch loop outputs
- Blue: for matrix outputs, there are 4-ch matrix outputs
- White: for bi-direction talk, one is for audio in and the other is for audio out.

Figure 35 37-pin cable

3.6.8.5 Matrix setup

3.6.8.5.1 Enter the Menu of Video Matrix

In the menu, From “ADVANCED” to “VIDEO MATRIX”. See Figure 36.

Figure 36 Menu

3.6.8.5.2 3.2. Right mouse menu

Right click the mouse to select “Video Matrix”. See Figure 37.

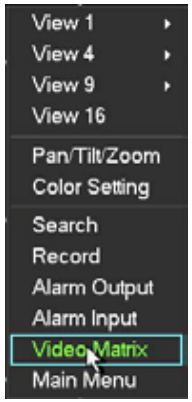


Figure 37 Right mouse menu

3.6.8.6 Video Matrix Interface and Application

The video matrix window is shown as in Figure 38.Now LBL series support 4-channel matrix outputs. You can set for each channel. The function consists of two types.

Figure 38 video matrix

3.6.8.6.1 Single Tour

First, highlight enable tour. Then set interval time and select corresponding cameras. You can select “ALL” to tour between all channels. Only Group 1 supports “ ALL “function.

Note:

- ”- -“means that there is no alarm activation tour.
- If you have selected the “ALL” for the matrix output in Group 1, the matrix output will tour between all cameras and the other groups setting will be null.

3.6.8.6.2 Alarm Tour

Select the “alarm in” channel number from the drawdown menu. If there is an alarm signal from the channel selected, the matrix output will go to tour as you set in the “Alarm” setting (Setting->alarm). See Figure 39.

Alarm tour has higher priority than single tour during this period, the single tour will stop. After alarm activation tour, the matrix output will continue single tour.

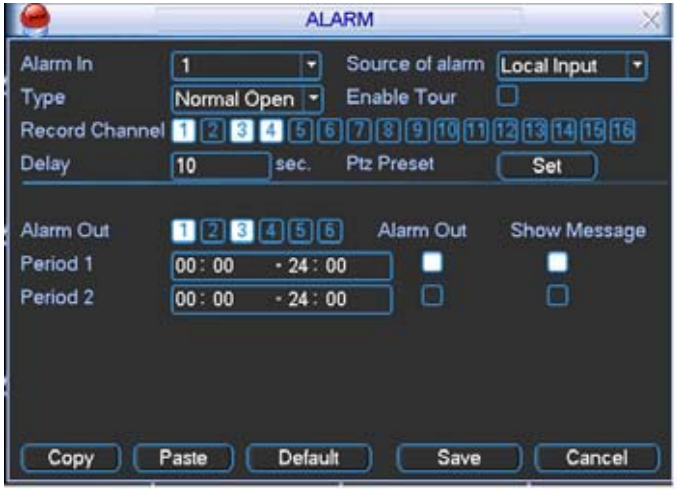


Figure 39 Alarm setup

3.6.8.7 Examples

3.6.8.7.1 Example one

In Figure 40, matrix outputs”1”, “3”, “4” tour between all cameras of the DVR. Matrix output 2 tours between “CAM1, CAM6 and CAM7” of the DVR. The interval is five seconds.

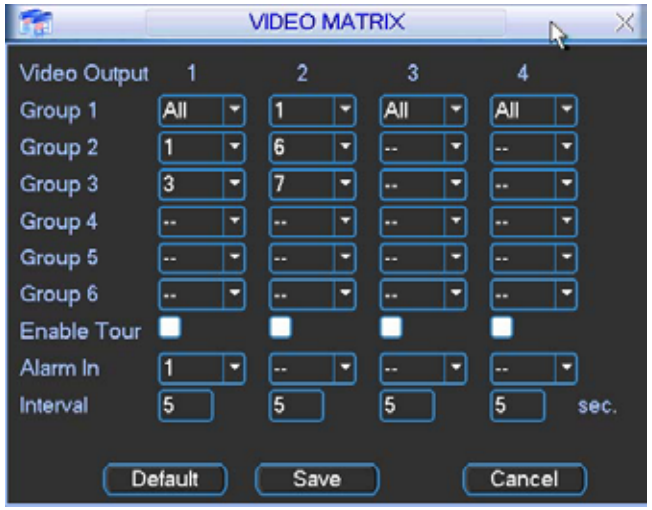

VIDEO MATRIX
Video Output 1 2 3 4
Group 1 All 1 All All
Group 2 1 6 -- --
Group 3 3 7 -- --
Group 4 -- -- -- --
Group 5 -- -- -- --
Group 6 -- -- -- --
Enable Tour
Alarm In 1 -- -- --
Interval 5 5 5 5 sec.
Default
Save
Cancel

Figure 40 Example one

3.6.8.7.2 Example two

In Figure 41, when alarm occurs in channel one, the activated matrix output one begins touring between CAM1, CAM3 and CAM4 of the DVR until alarm activation tour stops.

Figure 41 Example two

3.7 Information

Here is for you to view system information. There are totally five items: HDD(hard disk information), BPS(data stream statistics),Log and version and online user. See Figure 42.

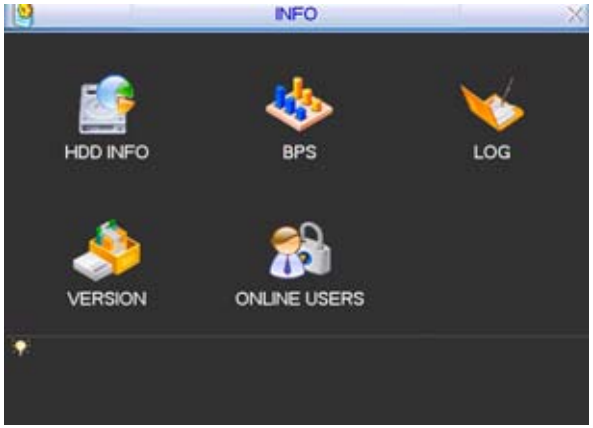


Figure 42

3.7.1 Hard disk information

Here is to list hard disk type, total space, free space, video start time and status. See Figure 43.

Note:

Please remove the broken hard disk before you add a new one.

Once there is a hard disk confliction, please check hard disk time and system time is the same or not. Please go to setting then general to modify system time. At last, reboot the system to solve this problem.

HDD INFO
IDE 1 2 3 4
Master O O - -
Slave O O - -
4 Type Total Space Free Space Status
All - 327664M 327656M -
1* Read/Write 81916M 81914M Normal
2 Read/Write 81916M 81914M Normal
3 Read/Write 81916M 81914M Normal
4 Read/Write 81916M 81914M Normal
Page Up
Page Down
View recording time

Figure 43 HDD information

3.7.2 BPS

Here is for you to view current video data stream (KB/s) and occupied hard disk storage (MB/h). See Figure 44.

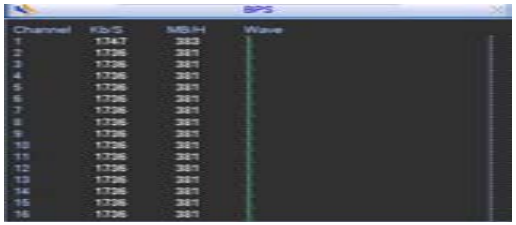


Figure 44 BPS

3.7.3 Log

Here is for you to view system log file. System lists the following information. See Figure 45.

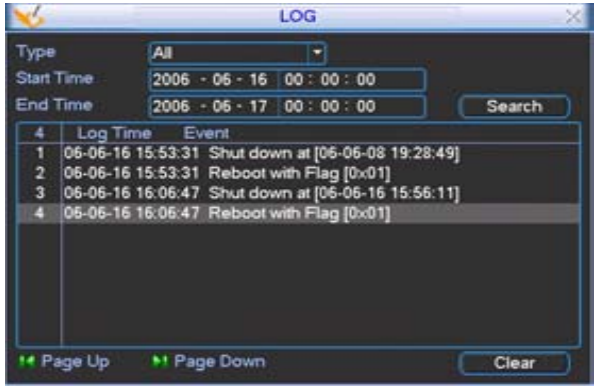


Figure 45 Log

3.7.4 Version

Here is for you to view some version information. See Figure 46.

- Channel
- Alarm in
- Alarm out
- System version:
- Baud rate:
- Start upgrade

VERSION
Channels 16
Alarm In 16
Alarm Out 6
System Version 1.28
Build Date 2006-05-24
UPGRADE
If you need to upgrade system now,please insert USB disk,then press the start button to start upgrade.Don't shut down the power during upgrade!
Start

Figure 46 Version

3.7.5 Online users

Here is for you manage online users. See Figure 47.

You can disconnect one user or block one user. (You need to have proper right)

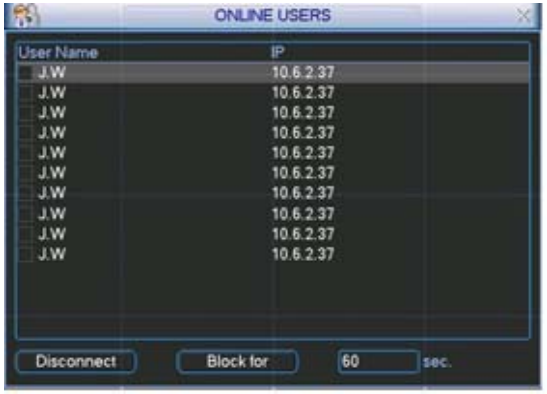


Figure 47 Online users

3.8 Exit

Double click exit button, system pop up a dialogue box for you to select. See Figure 48.

- Logout menu user: log out menu. You need to input password when you login the next time.
- Restart application.
- Shutdown: system shuts down and turns off power.
- Restart system: system reboot.

MAIN MENU
SHUTDOWN
Logout menu user
Logout menu user
Restart application
Shutdown
Restart system
Logout the OSD menu or reset/restart the system. After idle for standby time (no inputs), the system will exit OSD automatically.

Figure 48 Exit

4 About auxiliary menu

In the single window surveillance screen, right click mouse (click “fn” Button in the front panel or click AUX key in the remote controller). The image shows as below: see Figure 49.

Figure 49 Shortcut menu

Click Pan/Tilt/Zoom, the image shows as below. See Figure 50.

Here you can set the following items:

- Zoom
- Focus
- Iris

Click icon and to adjust zoom, focus and Iris.

Figure 50 Zoom/Focus/Iris setup

In Figure 50, please click direction arrows (See Figure 51) to adjust PTZ position. There are totally eight direction arrows. (Please note there are only four direction arrows in DVR front panel.)

Figure 51 Direction arrow

4.1.1 Fast location key

In the middle of the eight direction arrows, there is a fast location key. (See Figure 52) Click this button, system goes back to the single screen mode. Drag the mouse in the screen to adjust section size.

Figure 52 Fast location key

Here is a sheet for you reference.

Name	Function key	function	Shortcut key	Function key	function	Shortcut key
Zoom		Near	▶		Far	▶▶
Focus		Near	◀		Far	▶

Iris close II◀ Open ▶II

4.2 Preset patrol pattern border function

In Figure 50 click the set button. The image shows as below:

Here you can set the following items:

- Preset
- Patrol
- Pattern
- Border

Figure 53 Preset patrol pattern border setup

In Figure 50, click page switch button, the image shows as below. See Figure 54.

Here you can activate the following functions:

- Preset
- Patrol
- Pattern
- Aux on
- Aux off
- Auto scan
- Auto pan
- Light on

Figure 54 activate function

4.2.1 Preset setup

Note: The following setups are usually operated in the Figure 50, Figure 53 and Figure 54.

In Figure 50, use eight direction arrows to adjust camera to the proper position.

In Figure 53, click preset button and input preset number. The image is shown as in Figure 55

Add this preset to one patrol number

Figure 55 Preset setup

4.2.2 Activate preset

In Figure 54 please input preset number in the No. blank, and click preset button.

4.2.3 Patrol setup

In Figure 53, click patrol button. The image shows like Figure 56.

Input preset number and then add this preset to one patrol.

Figure 56 Patrol setup

4.2.4 Activate patrol

In Figure 54, input patrol number in the No. blank and click patrol button

4.2.5 Pattern setup

In Figure 53, click pattern button and then click begin button. The image shows like Figure 57. Please go to Figure 50 to modify zoom, focus, and iris. Go back to Figure 57 and click end button. You can memorize all these setups as pattern 1.

Figure 57 Pattern setup

4.2.6 Activate pattern function

In Figure 54 input mode value in the No. blank, and click pattern button.

4.2.7 Border setup

In Figure 53, click border button. The image shows like Figure 58.

Please go to Figure 50, use direction arrows to select camera left limit, and then please go to Figure 58 and click left limit button

Repeat the above procedures to set right limit.

Figure 58 border setup

4.2.8 Activate border function

In Figure 54, click auto scan button, the system begins auto scan. Correspondingly, the auto scan button changes to stop button.

Click stop button to terminate scan operation.

4.3 Dome menu control

In Figure 54, click page switch button, the image is shows as below. See Figure 59

Click menu to enter dome menu. The direction arrows here are to control dome menu.

Click page switch button, system goes back to Figure 50.

Figure 59 dome menu control

5 Web client operation

5.1 Network connection

Before web client operation, please check the following items:

- Network connection is right
- DVR and PC network setup is right. Please refer to general-system setting-network setup
- Use order ping ***.***.***.***(* DVR IP address) to check connection is OK or not. Usually the return TTL value should be less than 255.

5.2 Login and logout

Open IE and input DVR address in the address column. For example, if your DVR IP is 10.1.27.200, then please input http:// 10.1.27.200 in IE address column.

System pops up warning information to ask you whether install webrec.cab control or not. Please click yes button.

After installation, the image shows like below. See Figure 60.

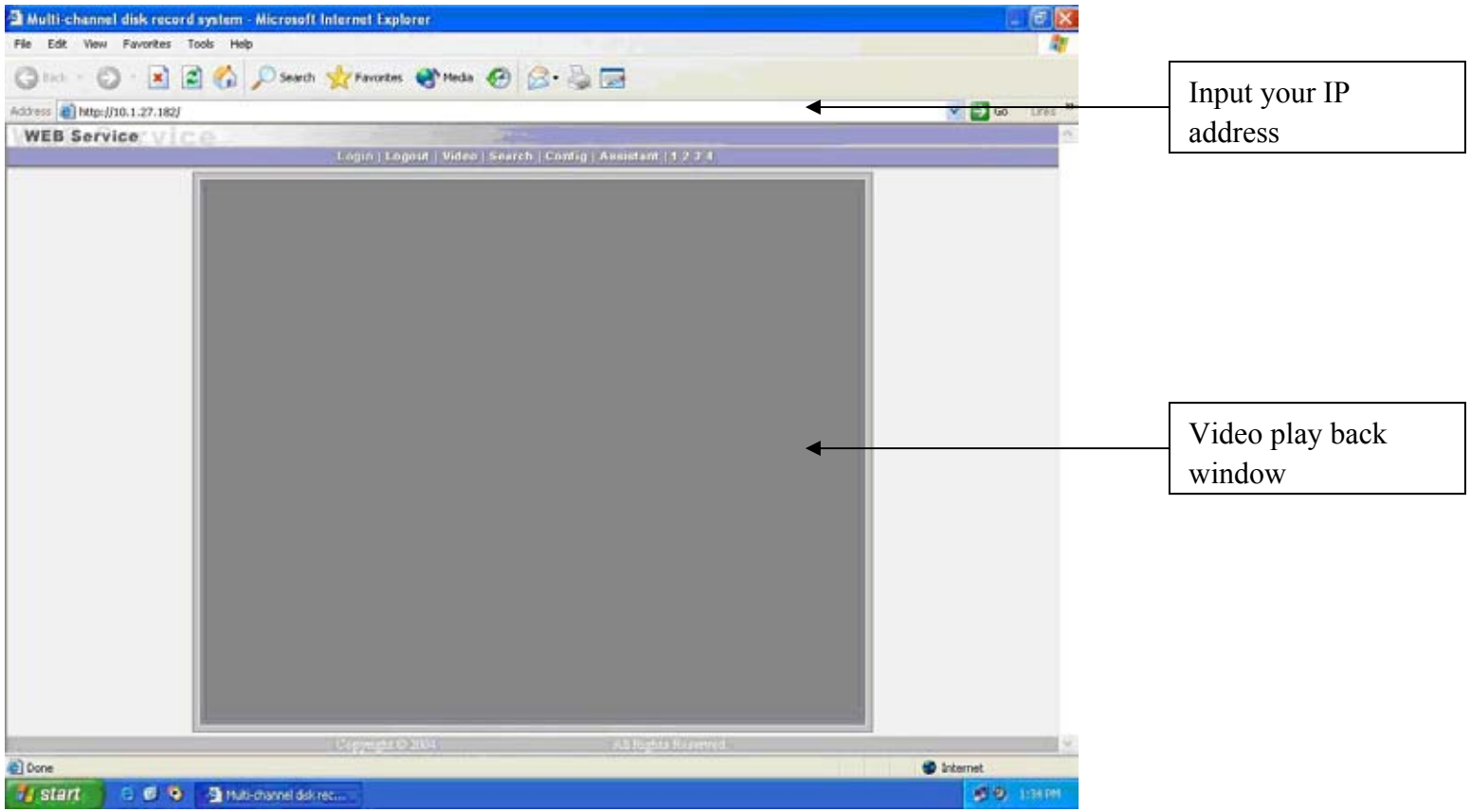

Multi-channel disk record system - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Search Favorites Media
Address http://10.1.27.182/
Go
WEB Service
Login | Logout | Video | Search | Config | Assistant | 1 2 3 4
Done
Internet
start
Input your IP address
Video play back window

Figure 60

There are six function keys: login, logout, video, search, configuration and assistant. See Figure 61.

Figure 61

Click login the following image will pop up. See Figure 62. Please input your user name and password. Default factory name is admin and password is admin.
Note: For security reasons, please modify your password after you first login.

Figure 62

5.3 Video (Right mouse menu operation)

After login, click video button or right click mouse, the image shows like below. See Figure 63.

- Real time monitor: choose the channel you want to implement real time monitor.
- Multi-video preview: System supports various video preview modes.
- Decode quality: there are totally four levels: general, good, better and best.
- Prearrange set: Here is for you to set preset point.
- Playback control bar: for you to control playback.
- Pan-tilt control: before operate, please make sure you have selected right pan-title protocol for DVR
- Set volume: Here is for you to adjust PC audio volume.
- Net data flux: here is for you to view current data flux
- Full screen: enter into full screen display mode.
- Resize video
- Video windows: Support 1/2/4 window display mode.

Figure 63

5.3.1 Real time monitor

Here is for you to select the channel you wan to implement real-time monitor.

5.3.2 Decode quality

Here is for you to select decode quality. There are totally four levels: general, good, better and best.

5.3.3 Playback control bar

Here is the playback bar when you are viewing video file. See Figure 64.

1: Save record
2: Stop
3: Snapshot
4: Slow replay
5: Play
6: Pause
7: Fast play
8: Full screen

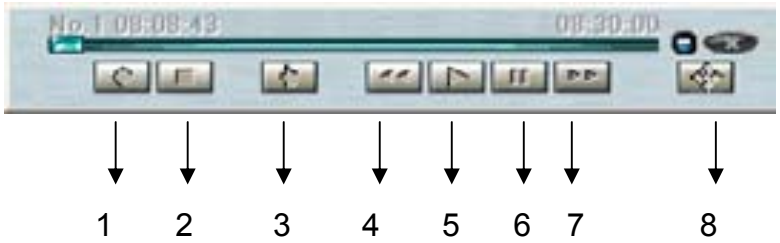


Figure 64

5.3.4 Pan-tilt control

Please click the corresponding direction arrow to adjust zoom, focus and iris. See Figure 65.

Note: before you operate this function, please go to 3.3.7 pan-tilt setup.

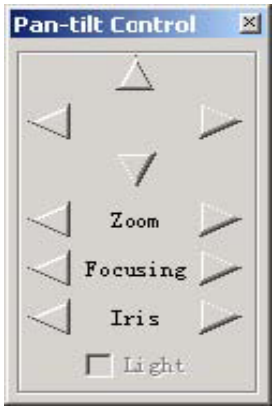


Figure 65

5.3.5 Set volume

Please drag volume bar to adjust audio level. You can draw a √ before Mute to turn off audio. See Figure 66.

Figure 66

5.3.6 Net data flux

Here is to display the statistics of the network transmission data flux. When no network data transmits the statistics shows as zero. See Figure 67.

Figure 67

5.3.7 Full screen

There are two ways to view full screen monitor: One is to double click on the blue window directly; the other is to select Full screen in the right click menu items. During multi-window state, choose one of the windows and double click for full screen display.

5.3.8 Resize video

There are four display ratios for you to choose: 40%, 60%, 80% and 100%. See Figure 68.

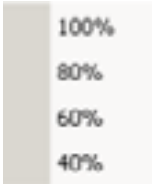


Figure 68

5.3.9 Video windows

Here is for you to choose display mode. See Figure 69.

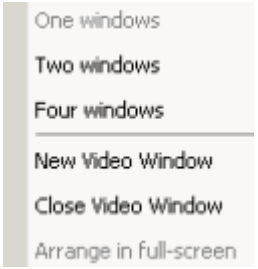


Figure 69

5.4 Search

Click search button, the image shows as below. See Figure 70. Here you can select type, channel and time to search the file you want. Please use page up/down key to view the search results. Double click file name, you can view the file and system will automatically backup the image in you installation directory.

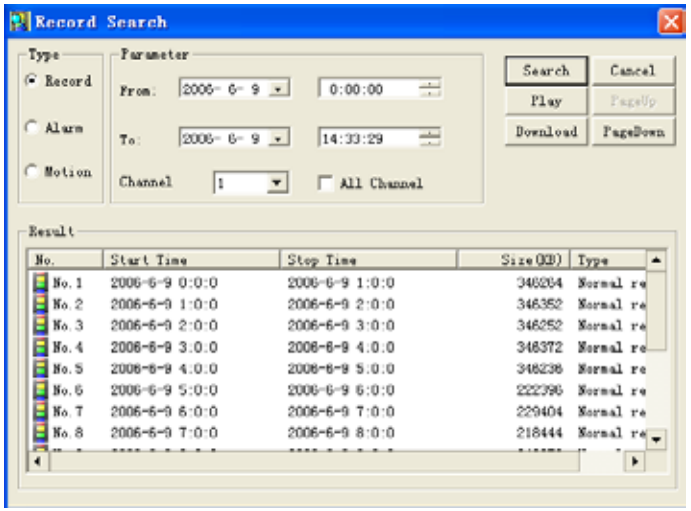


Figure 70 search

5.4.1 Download

You can select one or more files you want to download and then click down load button. System pops up a dialogue box to ask you specify directory. Then click save to download.

File name is usually made up of: file name +Channel N +date +time. File extension name is .mp4

For example: file name a-0120021205071028.mp4 means:

- 01: channel 1
- 20021205: 5th December,2002
- 071028 :7 o'clock 10 minutes 28 seconds.

5.5 System settings

Click configure button, there are totally five function keys:

- Image
- Alarm
- Motion detect

- General
- Schedule

5.5.1 General

Click general button, the image shows as below. See Figure 71.
Here you can select file length, and choose overwrite the previous file or stop recording when disk is full.
You can select channel, protocol, address and baud to control the lens or PTZ.

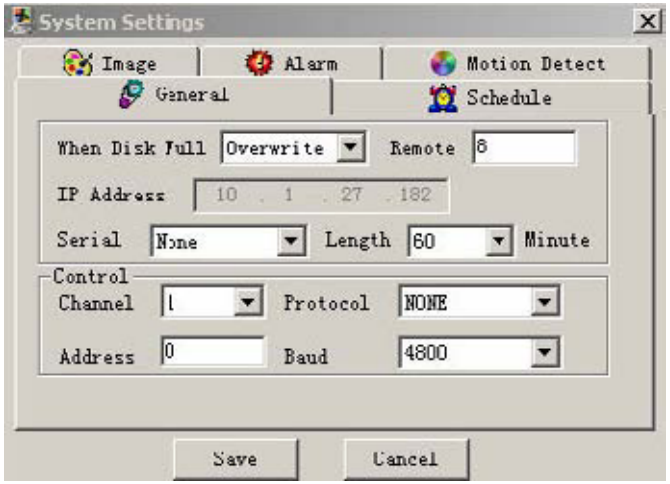


Figure 71

5.5.2 Schedule

Click schedule button, the system shows as below. See Figure 72. Here you can draw a √ before Sunday to Saturday. And then select time from 0 to 24 o'clock.

Figure 72

5.5.3 Image

Click image button, the system shows as below. See Figure 73. Here you can select the image quality and protocols for each channel.

Net transmission Protocol：

There are two protocols: TCP and Multicast.

5.5.3.1 TCP

Please select TCP if you visit DVR via internet.

TCP protocol user can view the image freely. You can choose the different protocol if necessary.

System only allows two users to view at the same time.

5.5.3.2 Multicast

Please select multicast if you visit DVR via intranet.

Multicast protocol user with control power can view the image at will and other users can only follow this user to view the image. System maximally allows five users to view at the same time. It can transmit 4 channels' image at the same time.

Style: Among the options of the coding styles there are：VBR(variable baud rate)、CBR(consistent baud rate)、f/10s、f/5s、f/2s、

1f/s、2f/s、3f/s、4f/s、5f/s、6f/s、8f/s、10f/s、12f/s、15f/s、20f/s. Select one of the styles and click save button.

For VBR and selectable frames there are six levels for image quality.

- Level 1：data flux 128Kb/S；
- Level 2: 256Kb/S；
- Level 3: 384Kb/S；
- Level 4：512Kb/S；
- Level 5：768 Kb/S；
- Level 6： 1Mb/S.

The different data flux occupies different bandwidth and the transmission image qualities are also different. Among them, Level 6 needs the widest bandwidth and can reveal the best image quality.

Figure 73

5.5.4 Alarm

Here is for you to choose record channel and output port. See Figure 74. You can draw a √ before the check box.

Figure 74

5.5.5 Motion detection

Motion detection will take effect exclude the time you set to schedule recording. See Figure 75.

The blue area is the selected motion detection area. You can move the dialogue box to choose the area and can also set the sensitivity. Click **Full screen** or press right key on the area to display the motion detection area at full screen. After setting the area user can **Save channel** or **Clear** the area.

Alarm output： Default replay output port is 2. If you want to set this channel fully as motion detection recording, you have to turn off the timing recording of this channel.

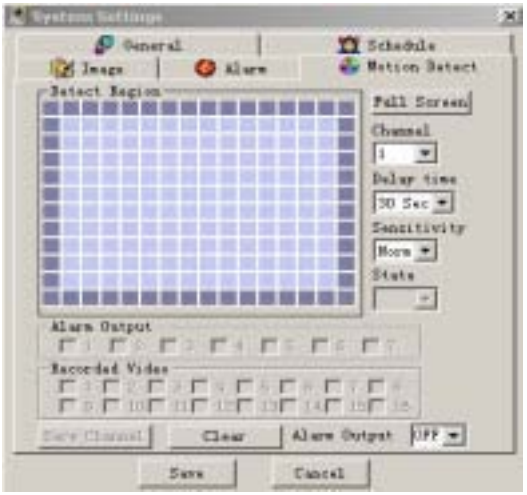


Figure 75

5.6 Assistant

Click assistant setting, the image shows as below. See Figure 76. There are nine function keys;

- User manage
- Record control
- Apply for control right
- Log information
- System information
- Alarm Prompt
- Channel name
- Upgrade BIOS
- about

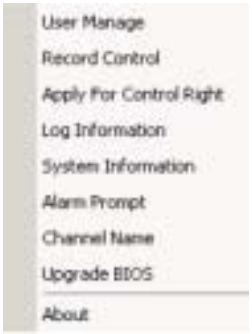


Figure 76

5.6.1 User management

Click user management button, the image shows like below. See Figure 77. There are five function keys.

- Save
- Add
- Modify
- delete
- cancel

Before you operate function, please note, there are three levels users：

- Administrator: have full set of system right. He can modify user information and etc;
- User: Have some system right;
- Guest: Only have limited system right. He can only modify personal information.

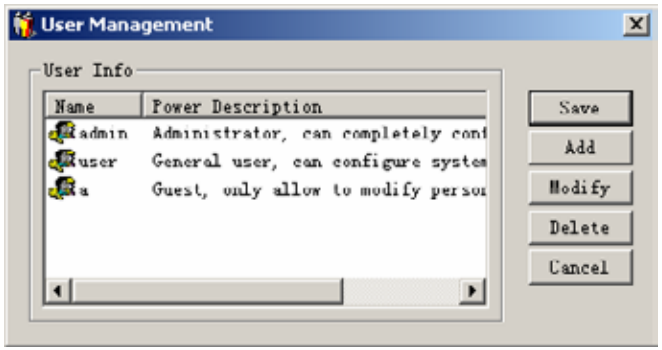


Figure 77

Add：

Click Add button, the following dialogue box pops up. See Figure 78.

Figure 78

You can input new user information in this dialogue box and click OK. (Only administrator can operate this function).

Modify：

Click modify button, the image shows like below. See Figure 79. You can modify the user information.

Figure 79

5.6.2 Record control

Click record control button the image shows like below. See Figure 80.

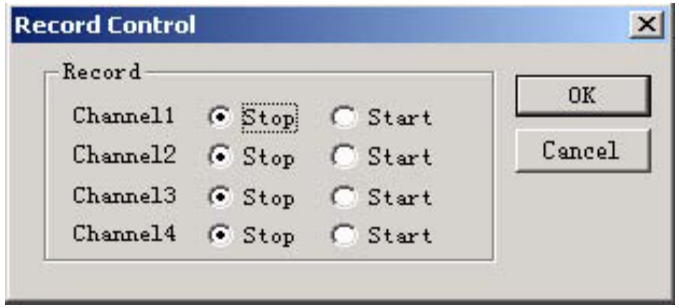


Figure 80

5.6.3 Apply for control right

Web client software allows multiple users login and operate at the same time. If you want to have the control power, you can click this option to apply control right. See Figure 81.

Note:

- The first login user gains the control power automatically if there is no administrator
- Administrator can gain the control automatically whenever he logins in.

Figure 81

The following picture is control right requests to the administrator asking for control power. See Figure 82.

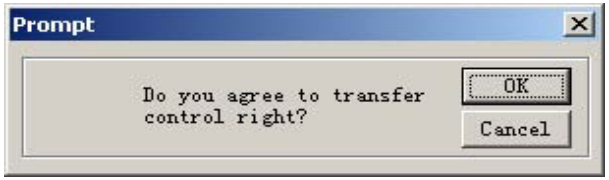


Figure 82

5.6.4 Log information

Systems automatically backup all operation in log information. You can click this button to view in detail. See Figure 83.

Once you click save log button, the Log will be automatically saved in the root directory such as “C:\ as a text file (e.g.: C:\ 10.1.27.193-log.txt)

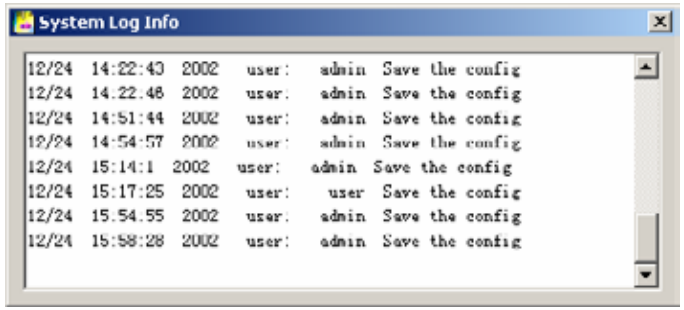

System Log Info
12/24 14:22:43 2002 user: admin Save the config
12/24 14:22:48 2002 user: admin Save the config
12/24 14:51:44 2002 user: admin Save the config
12/24 14:54:57 2002 user: admin Save the config
12/24 15:14:1 2002 user: admin Save the config
12/24 15:17:25 2002 user: user Save the config
12/24 15:54:55 2002 user: admin Save the config
12/24 15:58:28 2002 user: admin Save the config

Figure 83

5.6.5 System information

System information allows you to view basic information of the system. See Figure 84.

Here you can

- View disk information
- View file information
- Turn on/off audio
- Select video type
- Preview image
- Close or open auto recycle monitoring
- View network data flux

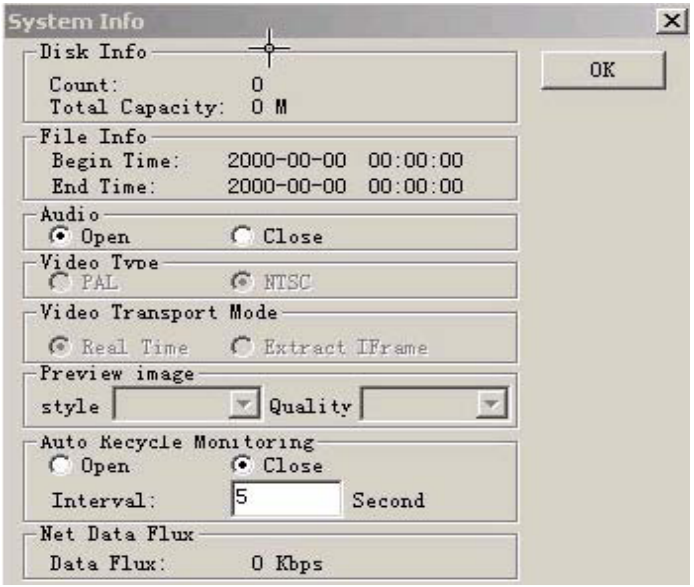


Figure 84

5.6.6 Alarm Prompt

Here is for you to choose different alarm audio. See Figure 85.

Figure 85

5.6.7 Channel name

Here is for you to modify channel name. The revised channel names will be displayed on the screen. The default setting of the channel name is Channel No.1 to Channel No.4. See Figure 86.

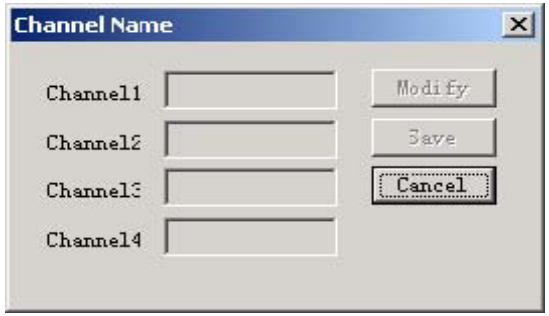


Figure 86

5.6.8 Upgrade BIOS

Click upgrade BIOS button, the image shows as below. See Figure 87.

Open the BIOS file (You can get from our local engineer or download from our web service) and then click send BIOS button.

After the upgrading, it will show the clue about the upgrading.

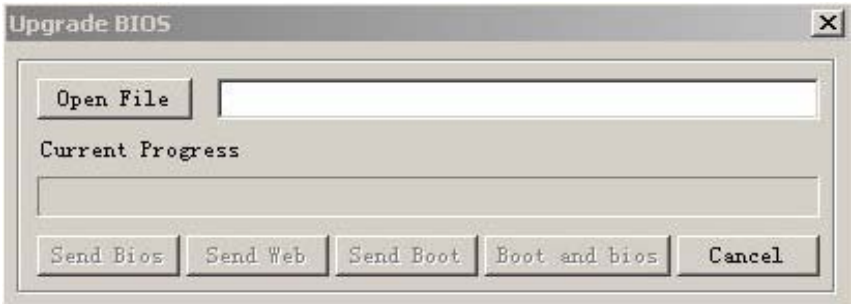


Figure 87

5.6.9 About

Here is for you to view basic system information. See Figure 88.

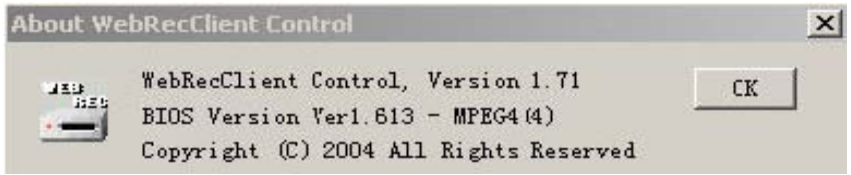


Figure 88

6 Serial port operation

6.1 Network connection

Before serial port operation, please connect matrix with DVR through RS232.

Then set DVR serial port protocol to the corresponding matrix protocol.

Note: please contact you local retail to confirm the DVR supports matrix protocol or not.

6.2 Keyboard

Control keyboard is very convenient for multi-DVR control, menu options and PTZ control. Select **keyboard control** from system **setting** ＞**RS232** ＞**function, and then** set **concerning** attributes such as protocol. Connect DVR RS232 port to shifter 25-pin RS232 port and then set proper control addresses for all connected DVRs. Now you can input DVR control address and use keyboard keys to set menu or control PTZ. See Figure 89.

Note：The keyboard works only when ACT light is on.

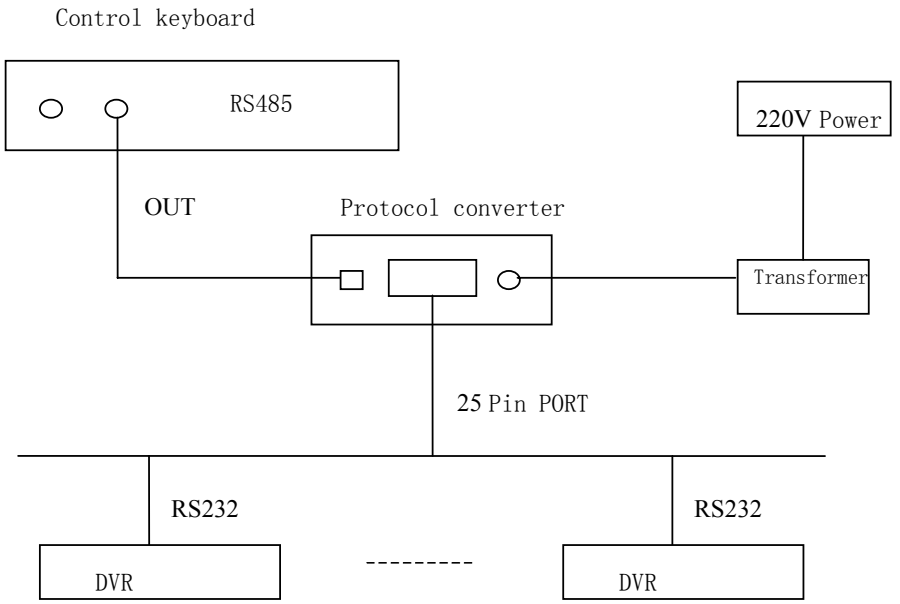


Figure 89 Keyboard connection

6.3 Matrix connection

You should consult your supplier whether your matrix control protocol is included in DVR before connection. Select the corresponding matrix protocol and you can use DVR front panel or the remote control to control the matrix when connected.

7 FAQ

1. This system can run in windows 98 or not?

Please install DIRECTX 7.0 or higher manually if you want to run this system in windows 98 environment.

2. System can not detect hard disk.

First check whether the hard disk is broken.

Then check jumper, IDE data cable and power cord. Please make sure they are appropriately connected.

When only one hard disk is connected to an IDE interface, this hard disk has to be jumped to master disc.

3. I can not use schedule recording function.

Please note the recording time unit takes one day as a working unit. E.g.: from 0 o'clock to 24 o'clock.

4. Recording light is flashing during the whole recording procedure.

Check the external video input signal. Such phenomena usually happen when the inputting signal is not standard.

Sometimes reading speed of HD is too slow, this phenomenon occurs. In this situation, you need to change hard disk.

5. My DVR is very hot, is there any problem?

DVR running procedures will generate a considerable hot. It is a normal phenomenon.

Please note DVR installation environment should be dry and clean. Keep ventilation openings smooth. Otherwise it will reduce system stability and lifelong

6. I can not see video signal on one channel while the other channels are ok

Check the video cable connection. You can connect camera video cable directly to monitor to test. If there is still no signal, there may be a problem with camera or video cable. If there is a video signal please contact your local suppliers for help.

7.I can not use my remote controller.

Check ACT light on the front panel is on or not.

- ATC light is on:

You need to change you remote controller battery.

- Act light is off:

Please move remote controller directly to the DVR, and then press address button. System pops up address input dialogue box. Please input you remote address (default value is 008). When act light is on, you can use it now

8.I can not control PTZ or dome

Check connection is right or not

Check system setup. Please refer to 3.3.7 pan-tilt setup.
Protocol should conform to dome (PTZ) setup.
Protocol is matched or not. You can contact you local supplier for more information

9. I can not login via web

There are two conditions:

- Network connection failure

Check your DVR and PC connection is right or nor. Please check DVR IP, network cable or use order ping to check.

- Invalid password or username

Please check user name has been user or password is not right.

10. At the first beginning, the surveillance video is poor when I connected to server.

If the image can return to normal in five seconds, this phenomena is normal

12. What peripheral equipment DVR can work with?

DVR supports much peripheral equipment such as keyboard、matrix、 control decode card.、alarm input and output equipment、 alarm server and access control system.

Slight difference may be found in user interface.
All the designs and software here are subject to change without prior written notice.
Please visit our website for more information.